

Ron Fuller, Chief Electrical Inspector

Vol. 15 No. 6

June 2012

Question of the Month

A pad mount oil-filled transformer installed outdoors must maintain a minimum clearance of ____ feet from any portion of a building with a combustible surface.

Note From The Chief

In May, many individuals and groups within L&I were recognized for their accomplishments in public service. I would like to recognize a special group within the Electrical Program for their ongoing commitment and expertise in helping our electrical customers.

The ECORE (Electrical Compliance, Outreach, Regulation and Education) team has been working throughout our state since 2005. Their efforts in combating the negative effects of the underground economy are unparalleled. Each year, they have become more effective. They provide training to contractors and inspectors. They communicate our mission and goals to customers across the state. They take compliance action when they find violations of the electrical law.

In the first ten months of this fiscal year, the ECORE team has exceeded their goal of focused citations and warnings by 25%. Even with the significant time they have spent training contractors and inspectors and doing customer outreach, the ECORE team has issued 642 violations to unlicensed electrical contractors, 604 violations to uncertified electricians, and 267 for no electrical permit since July 1, 2011.

We must applaud the team's diligence in uncovering the people working in the underground economy. I personally thank Phil Jordan, Jack Oxford, Bob Matson, Rand Jones, and Faith Jeffrey for their tireless efforts in helping make Washington safe.

WAC Revision Update

During the month of May, the Department accepted proposals for revision of WAC 296-46B. You will be able to view all of the proposals received on the [Rule Development](#) page of our website during the first week of June.

Underground Wet Locations

NEC 300.5(B) says the interior of enclosures or raceways installed underground is a wet location. Wet location listing and compliance with NEC 310.8(C) is required for all conductors and cables and for all splices or connectors in underground installations.

NEC Article 100 defines Wet Location (i.e. Location, Wet) as "Installations underground or in concrete slabs or masonry in direct contact with the earth; in locations subject to saturation with water or other liquids, such as vehicle washing areas; and in unprotected locations exposed to weather." All installations underground or in concrete slabs or masonry in direct contact with the earth are wet locations regardless of whether they are subject to saturation or in a protected location. An installation in or under an interior building concrete slab in contact with the earth is always a wet location even if a vapor barrier is installed between the slab and the earth.

Optional Standby System Feeder Conductors and Table 310.15(B)(6)

The capacity of an optional standby system must be determined in accordance with NEC 702.5. You must calculate the load on the standby source in accordance with Article 220 or by another approved method. If manual transfer equipment is used, the system must have adequate capacity and rating to supply all equipment intended for operation at one time. If automatic transfer equipment is used, the system must be capable of supplying the full load that is transferred, or it must be equipped with automatic load management equipment. The feeder conductor size must be determined in accordance with NEC 225.5. You must calculate the load on the optional standby system's feeder conductors in accordance with Article 220 for all the loads on the feeder. The ampacity of the optional standby system's feeder conductors must be in accordance with NEC 310.15.

Safety Tip of the Month!

Pay attention to the road! A new report from the National Safety Council reveals that cell phone use while driving, whether handheld or hands-free, contributes to more than 1 million crashes a year. Do not become a statistic. Drive defensively and be alert for distracted drivers around you. Distracted driving is dangerous.

The feeder size reductions allowed in NEC 310.15(B)(6) only apply when the optional standby system's feeder supplies all the loads for an individual dwelling unit of one-, two-, and multifamily dwellings. To qualify for this reduction, the optional standby system's feeder must supply all loads in the dwelling unit. Feeder conductors that supply a portion of the loads, a sub-panel, or an outbuilding, must be sized in accordance with NEC 310.15 for their full ampacity because load diversity is not available and the conductors may be loaded to their maximum capacity.

Grounding Permanently Installed Generators – Part 1 (Separately Derived Systems)

NEC 250.35 specifies the grounding requirements for permanently installed generators. The first step is to determine whether your system is separately derived. If the grounded conductor is switched in the transfer switch, the generator is a separately derived system. This type of system must be grounded much the same as a typical transformer in accordance with NEC 250.30.

A system bonding jumper must be installed to connect the grounded conductor of the generator to the equipment grounding conductors of the separately derived system. This connection must be made at any single point on the separately derived system from the source to the first system disconnecting means. A grounding electrode conductor, sized per NEC 250.66 for the derived phase conductors, must be connected to the same point on the system where the system bonding jumper is connected. The grounding electrode must be installed as near as possible to the point on the system where the grounding electrode conductor connects to the system. In most cases, this will be at the generator. NEC 250.58 requires that all of the grounding electrodes in or at a building or structure be bonded together to form a single grounding electrode system.

All structural steel and metal water piping shall be connected to the grounded conductor of a separately derived system in accordance with 250.104(D). This connection shall be made at the same point on the separately derived system where the grounding electrode conductor is connected.

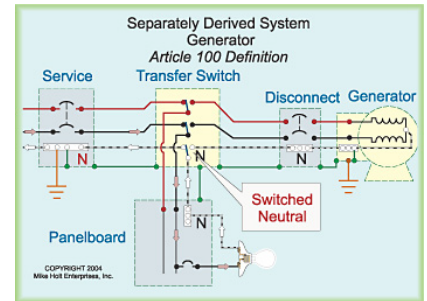


Image provided courtesy of Mike Holt Enterprises www.Mikeholt.com

Permit Fee Information

Electrical permit fees have been the topic of many [Electrical Currents Newsletter](#) articles. The majority of permits are purchased online. Online purchasers are required to select the correct fees at the time of purchase, but they are frequently incorrect resulting in an adjustment by the inspector at the time of inspection. To aid in the proper selection of permit fees, an enhanced [Electrical Fee Table With Notes](#) is available online.

A series of articles addressing permit fees appeared in the *Electrical Currents* newsletter between May and November of 2010. Here is a list of those articles with links to access them online:

May 2010	Single/2-Family Residential New Construction
June 2010	Single/2-Family Residential Existing Structures And Systems And Multifamily Dwellings
July 2010	Mobile or Modular Homes and RV Parks or Sites
August 2010	Commercial And Industrial
September 2010	Temporary Services, Concert And Stage Productions, Irrigation Systems
October 2010	Miscellaneous - Low Voltage; Yard Pole, Pedestal, Meter Loops; Generators; Annual Permits; Ditches
November 2010	Miscellaneous – Trip Fees; Progress Inspections; Plan Review; Variance; Class B; Provisional

More Payment Options for Online Transactions

The department will be offering more ways for you to pay for your permits and licenses online. Soon we will be accepting Visa, Master Card, American Express, Discover credit cards and providing e-check as a method of payment. E-Check is a one-time charge to your checking account. This change is scheduled to be available sometime in late June or July.

Ugly Installations

If viewing this document online, you may click on the picture to open a larger image in another window.

Violations: NEC 300.3 - Single conductors to be in raceway; NEC 300.4 - Conductors subject to physical damage; NEC 250.110 – Equipment grounding conductor required for feeder.



Answer to Question of the Month: 8 Feet – WAC 296-46B-450

This document may contain hyperlinks to internet web pages. To access this PDF document online, go to: <http://www.ElectricalCurrents.lni.wa.gov>

Electrical Section Internet Address: <http://www.ElectricalProgram.Lni.wa.gov/>

This document is available in alternative formats to accommodate persons with disabilities. For assistance, call 1-800-547-8367. (TDD/TTY users, please call 360-902-5797.) Labor & Industries is an Equal Opportunity employer.